

WHAT IS CLAIMED IS:

1. An isolated p53 mutated protein having the amino acid sequence of SEQ ID NO. 8.

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2. An isolated and purified DNA encoding a p53 mutated protein having an amino acid sequence of SEQ ID NO: 8.

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3. A vector comprising (a) an isolated DNA encoding a mutated p53 protein selected from the group consisting of SEQ ID NOs. 2 and 8; and (b) regulatory elements necessary for expressing said DNA in a cell.

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4. The vector of claim 3, wherein said vector comprises sequence encoding a tag linked to said mutated p53 protein.

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5. The vector of claim 4, wherein said tag is selected from the group consisting of a HA tag, a green fluorescent protein tag, a GST tag and a HIS tag.

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6. A host cell comprising the vector of claim 3.

7. The host cell of claim 6, wherein said cell is selected from  
10 the group consisting of bacterial cells, mammalian cells, yeast cells, plant cells and insect cells.

8. A method of increasing a cell's sensitivity to an apoptotic  
15 inducing agent, comprising the step of administering to said cell the vector of claim 3, wherein expression of mutated p53 protein encoded by said vector increases the cell's sensitivity to apoptotic inducing agent.

9. The method of claim 8, wherein said apoptotic inducing agent is selected from the group consisting of 9-nitro-camptothecin, doxorubicin, taxol and  $\gamma$ -irradiation.

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10. A method of inhibiting tumor cell growth, comprising the step of administering to said tumor cell the vector of claim 3, wherein expression of mutated p53 protein encoded by said vector inhibits the growth of said tumor cell.

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11. The method of claim 10, wherein said mutated p53 protein inhibits tumor cell growth by inducing an effect selected from the group consisting of apoptosis, DNA synthesis arrest, cell cycle arrest and cellular differentiation.

15      12. A method for the treatment of cell proliferative diseases in an individual, comprising the step of administering to said individual the vector of claim 3, wherein expression of mutated p53

protein encoded by said vector provides treatment for cell proliferative diseases in said individual.

5           13. The method of claims 12, wherein said vector is administered in the form of an aerosolized liposome.

14. The method of claim 12, further comprises the step of  
10 administering  $\gamma$ -irradiation or an anti-cancer compound to said individual at a time selected from the group consisting of before the administration of said vector, after the administration of said vector and concurrently with the administration of said vector.

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15. The method of claim 14, wherein said anti-cancer compound is selected from the group consisting of 9-nitrocamptothecin, paclitaxel, doxorubicin, 9-nitrocamptothecin, 5-fluorouracil, mitoxantrone, vincristine, cisplatin, epoposide, 20 tocotecan, tamoxifen, and carboplatin.

16. The method of claim 14, wherein said anti-cancer compound is administered in the form of an aerosolized liposome.

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17. The method of claims 12, wherein said cell proliferative disease is selected from the group consisting of neoplastic diseases and non-neoplastic disorders.

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18. The method of claim 17, wherein said neoplastic disease is selected from the group consisting of ovarian cancer, cervical cancer, endometrial cancer, bladder cancer, lung cancer, breast cancer, testicular cancer, prostate cancer, gliomas, fibrosarcomas, retinoblastomas, melanomas, soft tissue sarcomas, osteosarcomas, leukemia, colon cancer, carcinoma of the kidney, pancreatic cancer, basal cell carcinoma, and squamous cell carcinoma.

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19. The method of claim 17, wherein said non-neoplastic disease is selected from the group consisting of psoriasis, benign proliferative skin diseases, ichthyosis, papilloma, restinosis, scleroderma, hemangioma, leukoplakia, viral diseases, inflammatory process and autoimmune diseases.

20. The method of claim 19, wherein said autoimmune disease is selected from the group consisting of autoimmune thyroiditis, multiple sclerosis, myasthenia gravis, systemic lupus erythematosus, dermatitis herpetiformis, celiac disease, and rheumatoid arthritis.

15           21. The method of claim 19, wherein said viral disease is caused by human immunodeficiency virus.

22. The method of claim 19, wherein said inflammatory process is selected from the group consisting of inflammatory

processes involved in cardiovascular plaque formation and ultraviolet radiation induced skin damage.

5           23. An aerosolized liposome composition comprising the vector of claim 3.

10          24. The liposome composition of claim 23, wherein said liposome is dilrauroylphosphatidylcholine.

15          25. The liposome composition of claim 23, wherein said composition comprises about 5% to 7.5% carbon dioxide.

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20          26. The liposome composition of claim 23, wherein said composition comprises polyethylenimine nitrogen and DNA phosphate at a ratio (nitrogen:phosphate) from about 5:1 to about 20:1.